Solar America Initiative
Technology Acceptance Technical Exchange Meeting
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Infrastructure Development Breakout Group D: National PV Rating Systems; Systems Finance and Insurance

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Part 1: National PV Rating Systems

Would a national PV rating system help your business?
General Consensus Answer: Yes.

However, there are issues to be worked out, such as:

- How should the ratings be segmented?
  - by application: residential vs. commercial
  - by technology: flat-plate vs. concentrator
- Should rating be done at the installation level?
- Should rating be done at the component level or the systems level?

General Discussion, Comments, and Suggestions:

- Rating PV may be simpler at the component level, but there are compatibility issues.
- The manufacturer could certify components and systems, as well as substitute components.
- A field-verifiable rating could be valuable.
  - However, the rating would need to compensate for orientation, shading, etc.
- Suggestion: PV should be rated in three ways: a kW rating, a kWh rating, and a value rating.
- Suggestion: Look beyond rating—post real-time data from operating PV systems in different regions on the world-wide web for consumers to view. This allows the comparison of technologies side by side in different regions.
- Suggestion: A National PV rating system that includes:
  - Performance by Power Mark
  - Reliability by Power Mark
  - System Design and Installation by Power Mark
  - Safety Listing by NREL
  - Warranty of more than 20 years by manufacturer
- PV USA has a field verification for large PV systems that includes power performance based on air, wind, etc.

- PV USA's system is also useful for residential systems, but there are issues to be addressed in this.
- The Interstate Renewable Energy Council supports a national module certification process, and has seen that several states are interested in implementing a state-wide PV rating system, although they would prefer a national standard.
- Individual state rating systems would be a barrier.
- Systems-level certification is much more complex than component certification. It is important that the development of system performance standards be supported, but the Department of Energy should not expect a national rating system to be developed soon.
- The module should be certified by an independent third party.
- It is important that the nameplate rating is accurate and verified.
- To whom is the lack of a PV rating system a barrier, agencies or consumers?
    - Consumers certainly need information before they will buy.
- There is currently no national or international rating system for kWh production.
- Modules have peak-watt ratings. If performance was guaranteed with a warranty, the consumer would be more likely to buy.
- Performance-based incentives lead directly to financing, but need support.
    - Rate now, pay now vs. rate over time, pay later

Part 2: System Insurance and Finance

General Discussion, Comments, and Suggestions:

- Suggestion: A bank offering interest-free loans to consumers with government subsidization.
- Suggestion: Equity loans
    - A national program educating people on electricity savings, etc.
    - This may be cash positive.
- Effective messaging is needed.
    - Emphasize that solar is not a risk, it is an advantage due to issues such as climate change, etc.
- Emphasize the advantage to lenders—equity is expanded by energy savings.
    - Provide a presentation of package to lenders, to help them understand the additional equity provided by solar systems.
    - Provide hard data to the National Board of Appraisers regarding this.
    - No value is currently assigned to a PV system
    - California has a handbook advising appraisers on how to value PV systems
- A PV rating system could give the advantage of assurance to financial institutions.
    - Include a savings rating
- Work with regulators as well as utilities—promote utility ownership of systems.
- Develop a business model for utilities.

- Address consumer concerns about utility regulations and net-metering.
- Do not focus solely on utility incentives.
- The cost of insurance on installers is a barrier—additional insurance is required. This issue should be addressed.
- There is a role for the federal government in developing data to help appraisers write appraisals and prevent penalties.
- There is a correlation with public health for the insurance industry (cleaner air, etc.). How does solar impact this?
    - This resembles the airbag model for vehicles.
    - PV is also beneficial in disaster recovery, and global climate change protection, etc.
- Business interruption insurance benefits are applicable when PV is used as backup energy.
- Identify the different issues in the insurance of rooftop systems vs. large-scale systems.
    - Utility generation is very different. There are safety issues, etc. Also, utilities are already aware of methods of dealing with energy production issues.